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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/357,375	07/20/99	ARTHUR M	0660-0155-0-

022850 HM12/0918
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EXAMINER	
HUTSON, R	
ART UNIT	**PAPER NUMBER**
1652	9

DATE MAILED: 09/18/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/357,375	Arthur et al.
Examiner	**Group Art Unit**
Richard Hutson	1652

☒ Responsive to communication(s) filed on *Jul 7, 2000*

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *29-33* is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *29-33* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). *5*

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

The cancellation of claims 1 and 7 and the addition of claims 34 and 35 is acknowledged, thus claims 29-35 are at issue and are present for examination.

Applicant's election with traverse of the species drawn to SEQ ID NO: 2 (Van H) in Paper No. 7 is acknowledged. The traversal is on the ground(s) that there is not a patentable difference between the species as claimed. In the instant case each of the isolated proteins having a sequence selected from the group consisting of: SEQ ID NO: 2 (VanH), SEQ ID NO: 6 (VanX), SEQ ID NO: 8 (VanC), SEQ ID NO: 12 (VanR), SEQ ID NO: 14 (VanS), SEQ ID NO: 19 (transposase), SEQ ID NO: 21 (resolvase), SEQ ID NO: 23 (VanY) and SEQ ID NO: 25 (VanZ) comprise a chemically unrelated structure capable of separate manufacture, use and effect.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Each of these proteins comprises a distinct amino acid sequence and art pertaining to one of these sequences would not necessarily anticipate or make abvious the remaining sequences. Therefore each species is patentably distinct.

Further applicant has indicated that a serious burden does not exist in searching the entire application. This is not found persuasive because each species would require an independent sequence and text search drawn to the disparate functions of each of the protein species. As such coexamination would require a serious additional burden of search.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

1. Claim 34 is objected to because of the following informalities: Claim 34 recites "...a sequence hybridizing with one nucleotide sequence selected from the group consisting of SEQ ID NO: 8, SEQ ID NO: **9**, SEQ ID NO: **10**, SEQ ID NO: 7, SEQ ID NO: **9** and SEQ ID NO: **10**." SEQ ID NO: 9 and 10 are each listed here twice. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 29-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 29 (30-33 dependent from) is indefinite in that it is confusing in the recitation "or a combination thereof." Literal interpretation of the claim is an isolated protein having a sequence selected from the group of SEQ ID NOs: 2, 6, 8, 12, 14, 19, 21, 23 and 25 or a fusion of two or

more of these sequences. It is believed that the claim is intended to be drawn to a composition of isolated proteins having a sequence selected from the group of SEQ ID NOs: 2, 6, 8, 12, 14, 19, 21, 23 and 25, or a combination thereof. Although the claim might also be drawn to a single isolated protein having a sequence selected from the group of SEQ ID NOs: 2, 6, 8, 12, 14, 19, 21, 23 and 25, or a fusion of 2 or more of these SEQ ID NOs. For purposes of examination this claim has been interpreted to be drawn to a composition comprising an isolated protein having a sequence selected from the group of SEQ ID NOs: 2, 6, 8, 12, 14, 19, 21, 23 and 25, or a fusion of 2 or more of these SEQ ID NOs.

Claim 29 is further indefinite in the recitation of "hybridizing" as this term is unclear absent a statement of the conditions under which the hybridization reaction is performed. Nucleic acids which will hybridize under some hybridization conditions will not necessarily hybridize under different conditions.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 34 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 34 is directed to all possible compositions comprising at least one isolated protein or part of a protein selected from the group consisting of: SEQ ID NO: 2 (VanH), SEQ ID NO: 6 (VanX), SEQ ID NO: 8 (VanC), SEQ ID NO: 12 (VanR), SEQ ID NO: 14 (VanS), SEQ ID NO: 19 (transposase), SEQ ID NO: 21 (resolvase), SEQ ID NO: 23 (VanY) and SEQ ID NO: 25 (VanZ); any protein or part of a protein recognized by the antibodies directed against Van H, Van A, VanX, or VanC; and any part of a protein encoded by a sequence hybridizing with one nucleotide sequence selected from the group consisting of SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 7, SEQ ID NO: 9 and SEQ ID NO: 10. Literal interpretation of this claim reads on any composition comprising any protein or fragment thereof. The specification, however, only provides the representative species encompassed by compositions comprising at least one isolated protein selected from the group consisting of: SEQ ID NO: 2 (VanH), SEQ ID NO: 6 (VanX), SEQ ID NO: 8 (VanC), SEQ ID NO: 12 (VanR), SEQ ID NO: 14 (VanS), SEQ ID NO: 19 (transposase), SEQ ID NO: 21 (resolvase), SEQ ID NO: 23 (VanY) and SEQ ID NO: 25 (VanZ). There is no disclosure of any particular structure to function/activity relationship in the disclosed species. The specification also fails to describe additional representative species of these compositions by any identifying structural characteristics or properties other than that recited in claim 34, for which no predictability of structure is apparent. The genus of polypeptides that comprise the claimed composition is a large variable genus. Therefore, many functionally unrelated polypeptides are encompassed within the scope of these claims. Given this lack of additional representative species as encompassed by the claims, Applicants have failed to

sufficiently describe the claimed invention, in such full, clear, concise, and exact terms that a skilled artisan would recognize Applicants were in possession of the claimed invention.

Claim 34 is so broad as to encompass any composition comprising any protein having any activity or function. The scope of the claim is not commensurate with the enablement provided by the disclosure with regard to the utility of the compositions comprising the extremely large number of polypeptides broadly encompassed by the claim. It would require undue experimentation of the skilled artisan to use any of the claimed compositions comprising any protein with any activity. The specification is limited to teaching use of those compositions comprising SEQ ID NO: 2 (VanH), SEQ ID NO: 6 (VanX), SEQ ID NO: 8 (VanC), SEQ ID NO: 12 (VanR), SEQ ID NO: 14 (VanS), SEQ ID NO: 19 (transposase), SEQ ID NO: 21 (resolvase), SEQ ID NO: 23 (VanY) or SEQ ID NO: 25 (VanZ).. In view of the great breadth of the claims, amount of experimentation required to make the claimed composition, the lack of guidance, working examples, and unpredictability of the art in predicting function from a polypeptide primary structure, the claimed invention would require undue experimentation. As such, the specification fails to teach one of ordinary skill how to use the full scope of the compositions encompassed by this claim.

Thus, applicants have not provided sufficient guidance to enable one of ordinary skill in the art to make and use the claimed invention in a manner reasonably correlated with the scope of the claims broadly including any composition comprising any polypeptide having any activity or function. The scope of the claims must bear a reasonable correlation with the scope of

enablement (In re Fisher, 166 USPQ 19 24 (CCPA 1970)). Without sufficient guidance, determination of those proteins having the desired biological characteristics is unpredictable and the experimentation left to those skilled in the art is unnecessarily, and improperly, extensive and undue. See In re Wands 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 29 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Dutka-Malen et al. (Mol. Gen. Genet. 224: 364-372, Dec 1990).

Dutka-Malen et al. teach that the VanA glycopeptide resistance protein is related to D-alanyl-D-alanine ligase cell wall biosynthesis enzymes and teach the purification of this protein and its N-terminal sequence (page 365, column 2).

Therefore Dutka-Malen et al. anticipate claim 34.

Claim 34 is rejected under 35 U.S.C. 102(b) as being anticipated by The ICN Biomedicals, Inc. Catalog (page BC-18, 1990-1991).

The ICN Biomedicals, Inc. Catalog lists the amino acid alanine, as well as alanine linked to additional amino acids such as asparagine, aspartate, glutamate, glycine, histidine, isoleucine,

leucine, lysine and methionine (see page BC-18, 1990-1991). As the present claim is currently written it reads on any composition comprising alanine and the alanine comprising peptides as taught by The ICN Biomedicals, Inc. Catalog. Specifically, the claim drawn to "compositions comprising at least one isolated protein or part of a protein selected from the group consisting of: SEQ ID NO: 2 (VanH), SEQ ID NO: 6 (VanX), SEQ ID NO: 8 (VanC), SEQ ID NO: 12 (VanR), SEQ ID NO: 14 (VanS), SEQ ID NO: 19 (transposase), SEQ ID NO: 21 (resolvase), SEQ ID NO: 23 (VanY) and SEQ ID NO: 25 (VanZ); any protein or part of a protein recognized by the antibodies directed against Van H, Van A, VanX, or VanC; and any part of a protein encoded by a sequence hybridizing with one nucleotide sequence selected from the group consisting of SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 7, SEQ ID NO: 9 and SEQ ID NO: 10."

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brisson-Noel et al. (Antimicrobial Agents and Chemotherapy 34(5): 924-927, May 1990).

Brisson-Noel et al. teach the cloning and heterospecific expression of the resistance determinant VanA encoding high-level resistance to glycopeptides in *Enterococcus faecium* BM4147. Specifically they teach that the transformation of a 4-kilobase *EcoRI* fragment

encoding this protein conferred vancomycin resistance in *Enterococcus faecalis* and *Bacillus thuringiensis*.

One of ordinary skill in the art at the time of filing would have been motivated to isolate the VanA protein so that its sequence could be determined and the mechanism by which it confers its vancomycin resistance could be determined. One would have had a reasonable expectation of success based on the level of skill in the art at the time with respect to protein expression and purification.

Therfore, Brisson-Noel et al. make claim 34 obvious.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Hutson whose telephone number is (703) 308-0066. The examiner can normally be reached on M-F from 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapy Achutamurthy (Murthy), can be reached on (703) 308-3804. The fax number for Official Papers to Technology Center 1600 is (703) 305-3014.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Richard Hutson Ph.D.
9/12/2000

REBECCA E. PRESTY
PRIMARY EXAMINER
GROUP ~~1600~~ 1600